PATENT NO. : 7,071,205 B2 **APPLICATION NO. : 10/684229**

: July 4, 2006

DATED INVENTOR(S) : Lin Zhi et al. Page 1 of 10

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

IN THE TITLE PAGES:

In Item [56] References Cited, in U.S. PATENT DOCUMENTS: please add the following reference: --6,001,846 A 12/1999 Edwards et al. 514/285-in 6,566,358 please replace "Zhi et al." with -- Zhang et al.-in 6,566,372 please replace "West et al." with --Zhi et al.--

In Item [56] References Cited, in OTHER PUBLICATIONS: in Hamann et al., please replace "dihyrdo" with --dihydro--

At column 8, Table A, row R¹, please replace "C₁-C haloalkyl" with --C₁-C₄ haloalkyl-at column 9, Table A, row R⁹, please replace "CONR^HR¹²" with --CONR¹¹R¹²-at column 11, Table A, below row R¹⁶, please replace "R¹⁵" with --R¹⁶--

Please replace Claims 12, 13, 14, and 15 with the following Claims:

Col. 40

12. A compound of the formula:

COR"

(I)

wherein:

R¹ is selected from the group of hydrogen, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₁-C₄ heteroalkyl, CO₂R¹¹, SO₂R¹¹, and CONR¹¹R¹²;

 R^2 and R^3 each independently is selected from the group of hydrogen, C_1 – C_6 alkyl, and C₁-C₆ haloalkyl; or

R² and R³ taken together form a cycloalkyl ring of from three to twelve carbons;

R⁴ through R⁷ each independently is selected from the group of hydrogen, F, C1, Br, CN, OR¹¹, C₁-C₄ alkyl, C₁-C₄ haloalkyl, and C₁-C₄ heteroalkyl; or

R⁵ and R⁷ taken together form a bond; or

R⁶ and R⁷ taken together are selected from the group of methylidene, mono-substituted methylidene, di-substituted methylidene and carbonyl:

Note

PATENT NO. : 7,071,205 B2

Page 2 of 10

APPLICATION NO.: 10/684229 **DATED** : July 4, 2006 INVENTOR(S) : Lin Zhi et al.

> It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

 R^8 through R^{10} each independently is selected from the group of hydrogen, F, Cl, Br, I, NO₂, CN, OR¹¹, NR¹¹R¹², SR¹¹, COR¹¹, CO₂R¹¹, CONR¹¹R¹², C₁-C₈ alkyl, C₁-C₈ heteroalkyl, C₁-C₈ haloalkyl, allyl, C₂-C₈ alkenyl and C₂-C₈ alkynyl;

R¹¹ and R¹² each is independently selected from the group of hydrogen, C₁-C₄ alkyl, C_1 – C_4 heteroalkyl, and C_1 – C_4 haloalkyl;

R¹³ is hydrogen;

R¹⁴ and R¹⁶ taken together form a bond or "-O-" bridge; R¹⁵, R¹⁷, R¹⁸, R¹⁹, R²⁰ each independently is selected from the group of hydrogen, F, C1, C₁-C₄ alkyl, and C₁-C₄ haloalkyl;

R²¹ is hydrogen; and n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt thereof.

Col. 41

13. A compound of the formula:

(I)

PATENT NO.

: 7,071,205 B2

Page 3 of 10

DATED

APPLICATION NO.: 10/684229 : July 4, 2006

INVENTOR(S)

: Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

wherein:

R¹ is selected from the group of hydrogen, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₁-C₄ heteroalkyl, COR¹¹, CO₂R¹¹, SO₂R¹¹, and CONR¹¹R¹²;

R² and R³ each independently is selected from the group of hydrogen, C₁-C₆ alkyl, and C₁-C₆ haloalkyl; or

R² and R³ taken together form a cycloalkyl ring of from three to twelve carbons;

R⁴ through R⁷ each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR¹¹, C₁-C₄ alkyl, C₁-C₄ haloalkyl, and C₁-C₄ heteroalkyl; or

R⁵ and R⁷ taken together form a bond; or

R⁶ and R⁷ taken together are selected from the group of methylidene, mono-substituted methylidene, di-substituted methylidene and carbonyl;

R⁸ through R¹⁰ each independently is selected from the group of hydrogen, F, Cl, Br, I, NO₂, CN, OR¹¹, NR¹¹R¹², SR¹¹, COR¹¹, CO₂R¹¹, CONR¹¹R¹², C₁-C₈ alkyl, C₁-C₈ heteroalkyl, C1-C8 haloalkyl, allyl, C2-C8 alkenyl and C2-C8 alkynyl;

R¹¹ and R¹² each is independently selected from the group of hydrogen, C₁-C₄ alkyl, C_1 – C_4 heteroalkyl, and C_1 – C_4 haloalkyl:

R¹³ is hydrogen;

R¹⁴, R¹⁵, R¹⁸, R¹⁹, R²⁰ each independently is selected from the group of hydrogen, F, Cl, C_1 – C_4 alkyl, and C_1 – C_4 haloalkyl;

 R^{16} and R^{17} taken together are selected from the group of methylidene, mono-substituted methylidene, and di-substituted methylidene:

R²¹ is hydrogen; or

R²¹ and R²⁰ taken together form a bond;

n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt thereof.

PATENT NO.

: 7,071,205 B2

Page 4 of 10

APPLICATION NO. : 10/684229 DATED

: July 4, 2006

INVENTOR(S) : Lin Zhi et al.

> It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 42

14. A compound of the formula:

(I)

wherein:

 R^{1} is selected from the group of hydrogen, C_{1} – C_{4} alkyl, C_{1} – C_{4} haloalkyl, C_{1} – C_{4} heteroalkyl, COR^{11} , $CO_{2}R^{11}$, $SO_{2}R^{11}$, and $CONR^{11}R^{12}$;

R² and R³ each independently is selected from the group of hydrogen, C₁-C₆ alkyl, and C₁-C₆ haloalkyl; or

R² and R³ taken together form a cycloalkyl ring of from three to twelve carbons;

R⁴ through R⁷ each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR¹¹, C₁-C₄ alkyl, C₁-C₄ haloalkyl, and C₁-C₄ heteroalkyl; or

R⁵ and R⁷ taken together form a bond; or

R⁶ and R⁷ taken together are selected from the group of methylidene, mono-substituted methylidene, di-substituted methylidene and carbonyl;

R⁸ through R¹⁰ each independently is selected from the group of hydrogen, F, Cl, Br, I, NO₂, CN, OR¹¹, NR¹¹R¹², SR¹¹, COR¹¹, CO₂R¹¹, CONR¹¹R¹², C₁-C₈ alkyl, C₁-C₈ heteroalkyl, C_1 – C_8 haloalkyl, allyl, C_2 – C_8 alkenyl and C_2 – C_8 alkynyl;

PATENT NO.

: 7,071205 B2

Page 5 of 10

APPLICATION NO.: 10/684229 DATED

: July 4, 2006

INVENTOR(S)

: Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

R¹¹ and R¹² each is independently selected from the group of hydrogen, C₁-C₄ alkyl, C₁- C_4 heteroalkyl, and C_1 – C_4 haloalkyl;

R¹³ is hydrogen;

R¹⁴, R¹⁵, R¹⁷, R²⁰ each independently is selected from the group of hydrogen, F, Cl, C₁- C_4 alkyl, and C_1 – C_4 haloalkyl;

R¹⁶ and R¹⁸ taken together form a bond when n is 1; R¹⁶ and R¹⁹ taken together form a bond when n is 0;

R²¹ is hydrogen; and

n is 0, 1, 2, or 3;

or a pharmaceutically acceptable salt thereof.

Col. 42-45

15. A Compound selected from the group of:

(±)-(51,1'l)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 24):

(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 25):

(+)-(51,1'l)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 27);

(-)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 28);

(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 29):

PATENT NO. : 7,071,205 B2

Page 6 of 10

APPLICATION NO.: 10/684229 DATED: July 4, 2006 INVENTOR(S): Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- (±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethy1-5H-chromeno[3,4-f]quinoline (compound 30);
- (+)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethyl-5H-cbromeno[3,4-fjquinoline (compound 32);
- (-)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-fJquinoline (compound 33);
- (±)-(51,1'1)-5-3-methy1-2-cyclohexeny1)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 34);
- (±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 35);
- (+)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 37);
- (-)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 38);
- (±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-methoxy-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 39);
- (±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2-dimethyl-5H-chromeno[3,4-f]quinoline (compound 41);
- (±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2-dimethyl-5H-chromeno[3,4-f]quinoline (compound 42);
- (±)-(51,1'1)-5-(3-methy1-2-cyclopenteny1)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 44);
- (±)-(51,1'u)-5-(3-methyl-2-cyclopentenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethy-5H-chromeno[3,4-f]quinoline (compound 45);

PATENT NO. : 7,071,205 B2

Page 7 of 10

APPLICATION NO.: 10/684229
DATED: July 4, 2006
INVENTOR(S): Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- (±)-(51,1'1)-5-(3,5,5-trimethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 47);
- (±)-(51,1'u)-5-(3,5,5-trimethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 48);
- (±)-(51,1'1)-5-(3-methyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 50);
- (±)-(51,1'u)-5-(3-methyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 51);
- (±)-5-(3-methyl-3-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 52);
- (±)-5-(2-cyclopenta-1,3-dienyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 53);
- (±)-(51,1'1)-5-(3-ethy1-2-cyclohexeny1)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 55);
- (±)-(51,1'u)-5-(3-ethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 56);
- (±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 58);
- (±)-(51,1'u)-5-(3-methy1-2-cyclohexeny1)-7-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 59);
- (±)-(51,1'1)-5-(3-ethyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 61):
- (±)-(51,1'1)-5-(3-ethylidenecyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 62);

PATENT NO. : 7,071,205 B2

071,205 B2 Page 8 of 10

APPLICATION NO.: 10/684229
DATED: July 4, 2006
INVENTOR(S): Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- (±)-(51,1'1)-5-(3-methyl-3-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 63);
- (±)-(51,1'1)-5-(3-methyl-2-cyclobexenyl)-9-fluoro-1,2-dihydro-8-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 64);
- (±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-8-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 65);
- (±)-(51,1'1)-5-(2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 67);
- (±)-(51,1'u)-5-(2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 68);
- (±)-5-(1-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethy1-5H-chromeno[3,4-f]quinoline (compound 69);
- (±)-(51,1'1)-5-(2,3-dimethyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 71);
- (+)-(51,1'1)-5-(2,3-dimethyl-2-eyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 73);
- (-)-(51,1'1)-5-(2,3-dimethyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 74);
- (±)-(51,1'1)-5-(2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 75);
- (±)-(51,1'u)-5-(2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 76);
- (±)-(51,1'1)-5-(2-cyclohexenyl)-7,9-difluoro-1,2,3,4-tetrahydro-2,2-dimethyl-4-methylidene-5H-chromeno[3,4-f]quinoline (compound 77);

PATENT NO.

: 7,071,205 B2

Page 9 of 10

APPLICATION NO.: 10/684229 DATED

: July 4, 2006

INVENTOR(S)

: Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

- (±)-(51,1'1)-5-(2-methylidenecyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 79);
- (\pm) -(51,1'u)-5-(2-methylidenecyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 80):
- (±)-(51,1'1)-5-(2-oxocyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4flquinoline (compound 81);
- (\pm) -(51,1'u)-5-(2-oxocyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-1,2H-chromeno[3,4H-chromeno[3,f]quinoline (compound 82);
- (±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-methoxy-1,2-dihydro-1,2,2,4-tetramethyl-5Hchromeno[3,4-f]quinoline (compound 83);
- (±)-5-(2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 84); difluoro
- (±)-(51,1'1)-5-(2,3-dimethyl-2-cyclohexenyl)-7,9-4564476-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 85); cyclohexyl
- (±)-5-(3-methylidene-autorativi)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 87);
- (±)-(51,1'u)-5-(3-ethylidenecyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (compound 88);
- (±)-(51,1'1)-5-(2-cyclohepteny1)-7,9-difluoro-1,2-dihydro-2,2,4-trimethy1-5Hchromeno[3,4-f]quinoline (Compound 89);
- (±)-(51,1'1)-5-(2-cyclooctenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (Compound 91);
- (±)-(51,1'u)-5-(2-cyclooctenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5Hchromeno[3,4-f]quinoline (Compound 92):

Note

PATENT NO.

: 7,071,205 B2

Page 10 of 10

DATED

APPLICATION NO.: 10/684229 : July 4, 2006

INVENTOR(S)

: Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

(±)-(51,1'1)-5-(2,3-epoxy-3-methylcyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (Compound 94):

(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2,3,4-tetrahydro-2,2-dimethyl-4methylene-5H-chromeno[3,4-f]quinolin-3-ol (Compound 95);

(±)-(51,1'1)-5-(2,3-epoxy-2,3-dimethylcyclopentyl)-7,9-difluoro-1,2-dihydro-2,2,4trimethyl-5H-chromeno[3,4-f]quinoline (Compound 96);

(±)-(51,1'u)-5-(2,3-epoxy-3-methylcyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4trimethy1-5H-chromeno[3,4-f]quinoline (Compound 97); and

(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2,3,4-tetrahydro-2,2-dimethyl-5H-chromeno[3,4-f]quinolin-4-one (Compound 98).

This certificate supersedes certificate of correction.
issued November 28, 2006.

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Note